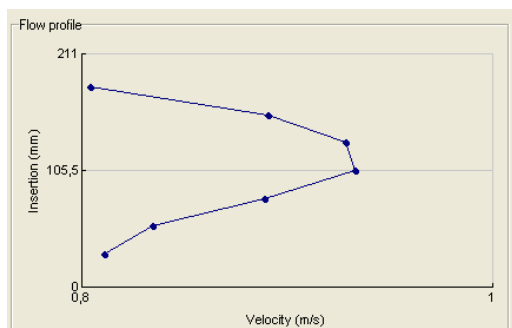


HydrINS2 / HydrINS 2 Mini

Overview of velocity profiling with Winfluid



Review	Date	Redaction	Changes	Visa
00	08/03/2011	MRE	Creation	

Summary

1	INTRODUCTION	4
2	VELOCITY PROFILING SOFTWARE LAUNCHING	4
3	SOFTWARE CONFIGURATION.....	5
4	USING PROFILE.....	9
5	IMPORT IN WINFLUID.....	10

Table of figures

Figure 1 : Launching from expert mode during probe programming in Winfluid.....	4
Figure 2 : Launching from Winfluid main window	4
Figure 3 : Profile editing window	5
Figure 4 : Parameters for flow profiling	6
Figure 5 : Connection of CC_HYDA3.....	6
Figure 6 : Way for velocity profiling	6
Figure 7 : Velocity profile measurement window	7
Figure 8 : Profile plots validation window.....	8
Figure 9 : Profile results overview window	9
Figure 10 : Velocity profile printing.....	10
Figure 11 : HydrINS 2 / HydrINS 2 Mini programming	10

1 Introduction

Editing velocity profile allows to calculate precise profile coefficient and then to obtain best velocity measurement.

2 Velocity profiling software launching

It can be launched from two ways :

From Expert mode

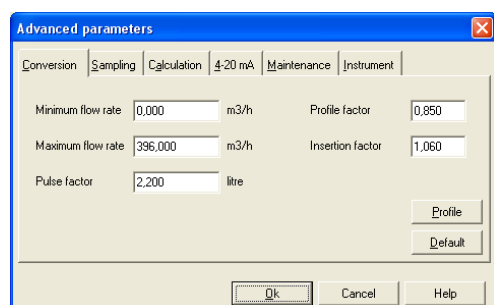


Figure 1 : Launching from expert mode during probe programming in Winfluid

From Winfluid main window



Figure 2 : Launching from Winfluid main window

3 Software configuration

The screenshot shows the 'Flow profiling' software window with the 'Parameters' tab selected. The window has a menu bar (File, Measure, Program, Parameters, ?) and a toolbar with icons for file operations, measurement, and help. The main area is divided into several sections:

- Measure:** Contains input fields for 'Site of measure', 'Operator', 'Comment', 'Type of probe', 'Internal diameter' (with a unit 'mm'), and 'Number of points'.
- Insertion at center:** Includes radio buttons for 'Measured profile factor' (selected) and 'Theoretic profile factor', followed by an 'Insertion factor' field. Below these are fields for 'Mean velocity and flow' (with units 'm/s' and 'm3/h') and 'Dissymmetry rating' (with a unit '%').
- Insertion at Fp=1:** Contains fields for 'Length of retraction' (with unit 'mm'), 'Length of insertion' (with unit 'mm'), and 'Insertion factor'.
- Flow profile:** A large empty area for displaying the flow profile.
- Table:** A table with 4 columns: 'Retraction (mm)', 'Insertion (mm)', 'Measured velocity (m/s)', and 'True velocity (m/s)'. It has 10 rows, with the first row highlighted in yellow.

Figure 3 : Profile editing window

Click on **Parameters** in toolbar to configure program parameters :

Click on OK to validate

To achieve profile measurements, click on  icon.

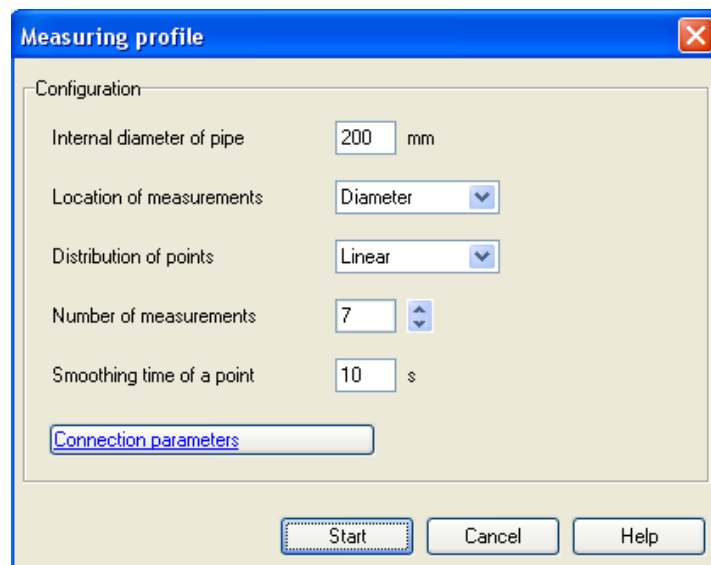


Figure 4 : Parameters for flow profiling

Connect **HydrINS 2/HydrINS 2 flowmeter** to PC using CC_HYDA3 cable.



Figure 5 : Connection of CC_HYDA3

Insert the probe at the bottom of the pipe

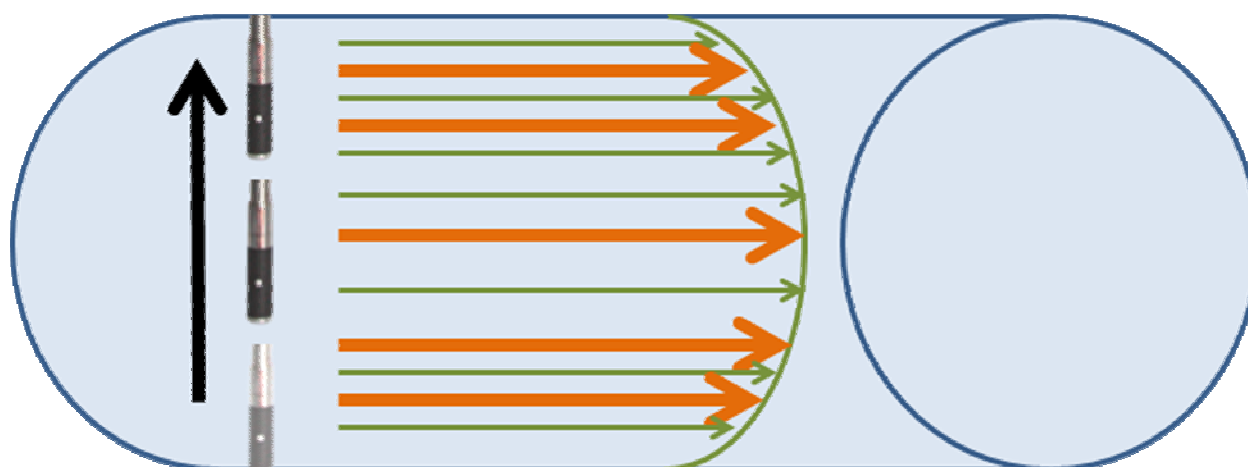


Figure 6 : Way for velocity profiling

Click on **Start**.

HydrINS N° 23869

Insertion au centre

☒ Coefficient de profil mesuré Vitesse moyenne m/s

☐ Coefficient de profil théorique Débit moyen m3/h

Coefficient d'insertion Dissymétrie %

Insertion à Fp=1

Longueur remontée mm

Longueur insertion mm

Coefficient d'insertion

	Remontée (mm)	Insertion (mm)	Vitesse mesurée (m/s)	Vitesse réelle (m/s)	Coef. insertion	Coef. profil
1	0.0	170.0			0.974	
2	23.3	146.7			1.003	
3	46.7	123.3			1.032	
4	70.0	100.0			1.064	
5	93.3	76.7			1.089	

Point de mesure

Longueur remontée mm

Longueur insertion mm

Vitesse mesurée m/s

Vitesse réelle m/s

Vitesse réelle (m/s)

Profil de vitesse

Figure 7 : Velocity profile measurement window

Click on **measurement** for the 7 points of the profile

After validation, the following window is displayed :

Validation

Identification

Nom du site

Opérateur

Commentaire

RAS

Insertion au centre

☒ Coefficient de profil mesuré

-0.898

☐ Coefficient de profil théorique

0.913

Coefficient d'insertion

1.064

Insertion à Fp=1

Longueur remontée

157 mm

Longueur insertion

13 mm

Coefficient d'insertion

1.168

Programmer les coefficients

☒ Pour une insertion au centre
 ☐ Ne pas modifier les coefficients

☐ Pour une insertion à Fp=1

Ok

Abandon

Aide

Figure 8 : Profile plots validation window

A dissymmetry factor is used to validate or invalidate the profile (profile is valid with less than 5 % of dissymmetry)

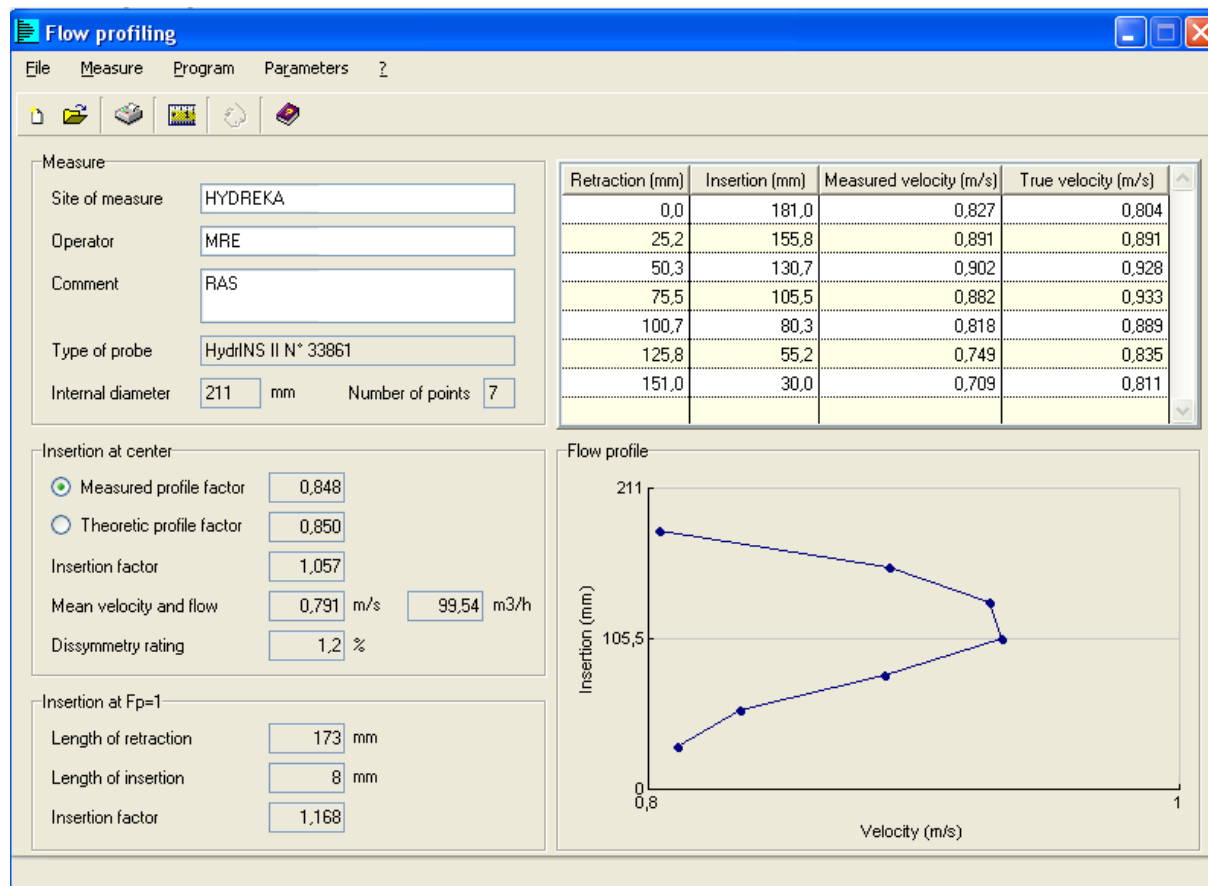


Figure 9 : Profile results overview window

Profile can be saved by clicking on **File > Save**

4 Using profile

Each profile is saved in a database, and is useful to :

- Programming optimum configuration of HydrINS 2 / HydrINS 2 Mini probe in Winfluid.
- Profile printing in pdf, word excel

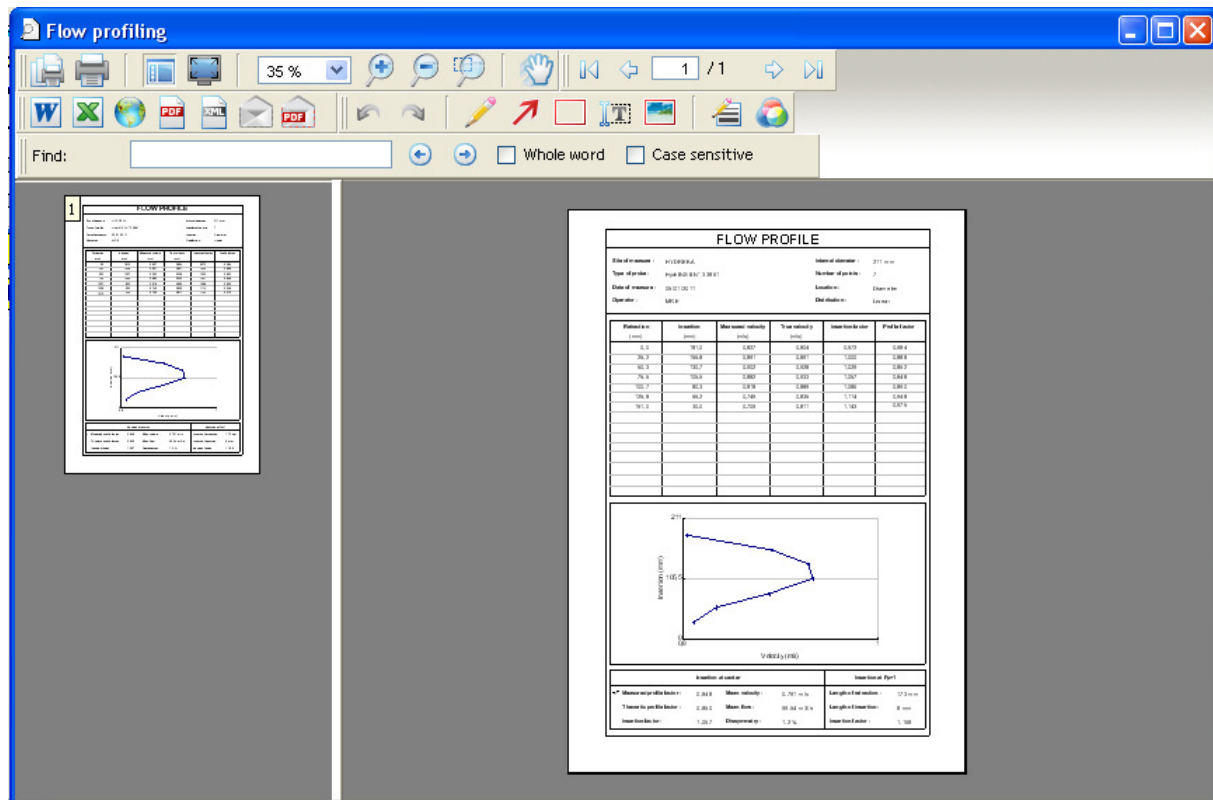


Figure 10 : Velocity profile printing

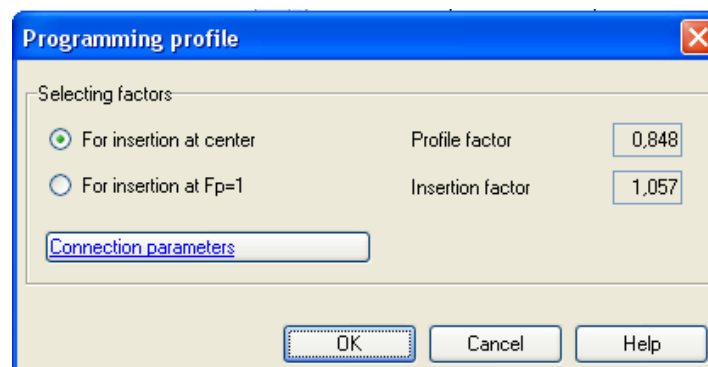


Figure 11 : HydrINS 2 / HydrINS 2 Mini programming

5 Import in Winfluid

The following parameters can be imported in Winfluid in order to program measurement parameters of the probe.

- Pipe Internal diameter
- Probe position
- Insertion factor
- Profile factor

The prerequisite is to launch profiling software from Expert mode.

NOTES

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